

The **Research Center for Pharmaceutical Engineering (RCPE)** is a global leader in pharmaceutical engineering sciences. We help our partners to create and manufacture advanced medicines for patients around the world, through optimizing products and processes.



WE ARE OFFERING A

PAID DIPLOMA/ MASTER'S THESIS

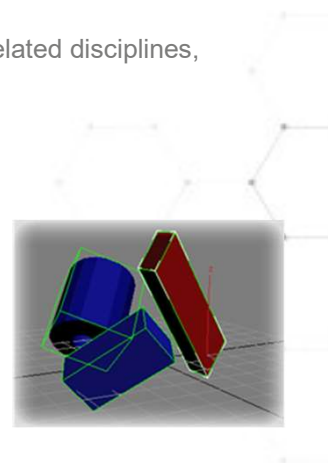
NEXT-LEVEL PARTICLE SIMULATIONS
REF. NO. DA154

To dedicated students of Mathematics, Physics, Mechanical Engineering, Informatics or related disciplines, we offer an opportunity to write a paid Diploma/Master's thesis.

OBJECTIVE:

At RCPE we are currently developing a software written in C++ (CUDA) for simulating granular matter (particles) utilizing the discrete element method (DEM). A lot of different processes are dealing with granular flows (e.g. mixing, powder transport, fluidized beds). Simulating these processes allows for better process understanding and optimization. The scope of this work could include one or more of the following topics:

- Develop, implement, and evaluate collision detection algorithms for particles with large aspect ratios or significant size differences
- Further improve contact algorithms for non-spherical particles (tablets, ellipsoids, superquadrics, polyhedra, triangular meshes)
- Improve accuracy (e.g. finite precision issues) and/or performance (i.e. runtime of the simulation) of the code



WITHIN THE FRAMEWORK OF THIS DIPLOMA/ MASTER'S THESIS WE OFFER THE FOLLOWING:

- Extensive participation in a top-level and industrially relevant research project in an international environment
- Supervised training in the task
- Assistance of experienced staff with the implementation of innovative ideas
- Access to highly modern infrastructure on campus of Graz University of Technology
- Assistance with the publication of results
- Adequate compensation and opportunities for personal and professional development

FINANCING:

- Compensation on the basis of a service contract

IF YOU ARE INTERESTED IN WRITING YOUR THESIS AT THE INTERFACE BETWEEN UNIVERSITY RESEARCH AND INDUSTRY/ BUSINESS AND TO CONTRIBUTE TO THE OPTIMIZATION OF PRODUCT AND PROCESS DEVELOPMENT IN THE PHARMACEUTICAL INDUSTRY, PLEASE CONTACT US INDICATING THE REFERENCE NUMBER.

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